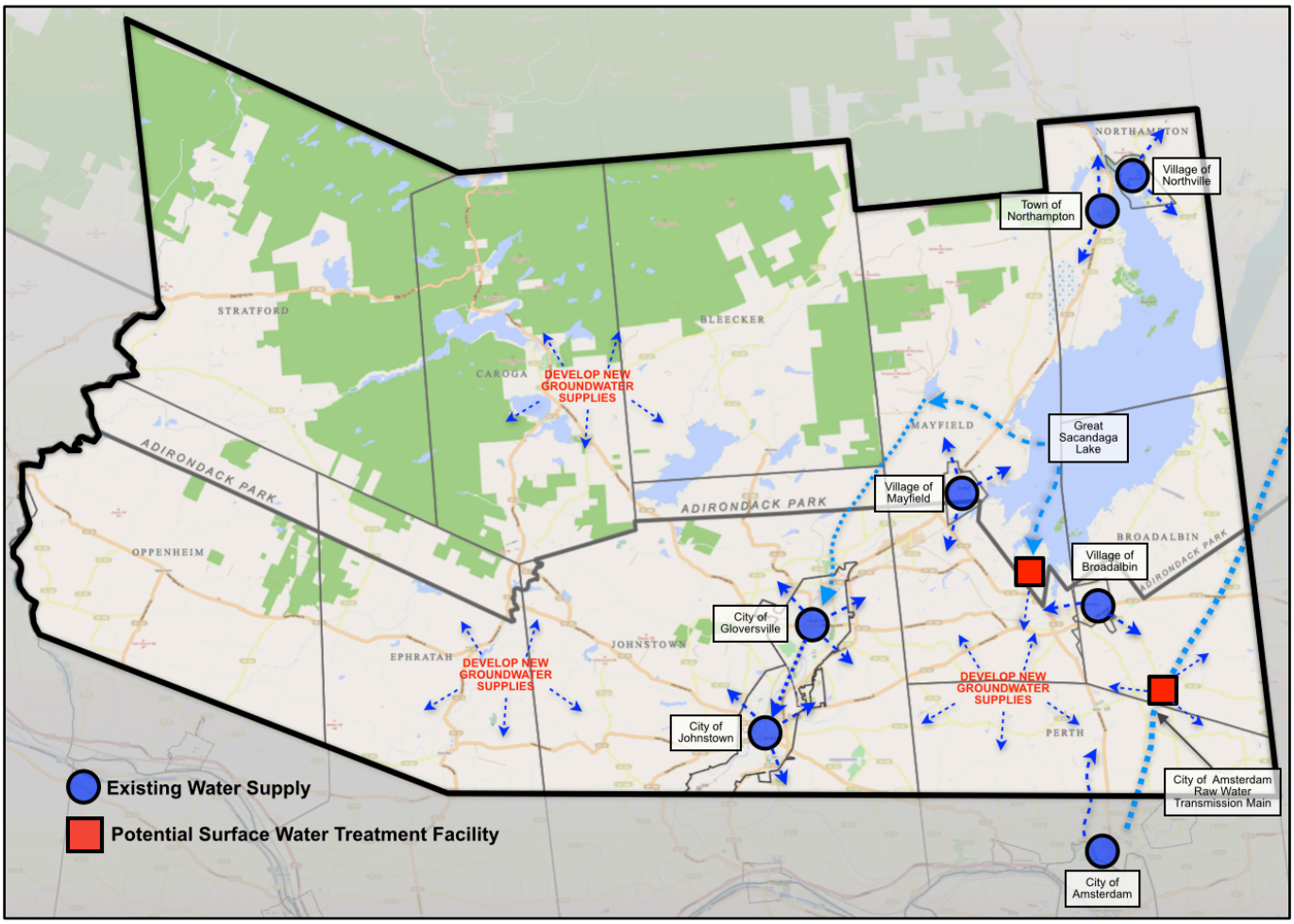
SMART Waters

A Regional Model for
Water and Wastewater Services in Fulton County, NY

EXECUTIVE SUMMARY

APRIL 14, 2014



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BACKGROUND

Fulton County is facing difficult fiscal times that challenge local leaders to find ways to increase property and sales tax revenues. Leaders in Fulton County recognize that land development is key to the economic growth within the County. Fulton County is fortunate in that it is strategically positioned to experience land development from potential business, commercial, retail and housing projects due to the technology related business growth in the Saratoga region to the east, Albany region to the south and Utica region to the west. However, the lack of available water and wastewater services is inhibiting land development in those areas of the County where vacant land exists.

In 2013, the Fulton County Board of Supervisors engaged the Environmental Design Partnership (EDP) to evaluate the feasibility for Fulton County to develop a regional water and wastewater system and propose a model for implementing the system. EDP was charged with gathering engineering and economic information for existing water and wastewater service providers in Fulton County; researching existing regional water and wastewater service providers in New York State, identifying water supply and wastewater treatment alternatives in Fulton County, and providing recommendations related to the potential development of regional water and wastewater systems in Fulton County.

EXISTING WATER AND WASTEWATER DELIVERY SYSTEM IN FULTON COUNTY

Six municipal water systems currently operate in Fulton County in the Cities of Gloversville and Johnstown, Villages of Broadalbin, Mayfield and Northville, and the Town of Northampton and four municipal wastewater systems in the Cities of Gloversville and Johnstown, Villages of Broadalbin and Mayfield, and the Town of Northampton. These systems are generally well run providing the residents and businesses of these communities with valuable services at reasonable rates. Some systems, the City of Gloversville water system in particular, have surplus capacities that could be used as an additional revenue source. Other municipalities could benefit from sharing resources with neighboring systems.

EDP received and reviewed a significant amount of information and data from each municipality that currently provides water and wastewater services. This section summarizes EDP's key findings derived from its review of this information and data.

A. WATER SUPPLY

1. The 2012 average daily and peak water use in existing municipal water systems in Fulton County was:

Municipality	Average Daily Use	Peak Daily Use
City of Gloversville	1.830 mgd	2.880 mgd
City of Johnstown	1.720 mgd	3.110 mgd
Village of Broadalbin	0.104 mgd	0.120 mgd
Village of Mayfield	0.092 mgd	0.210 mgd
Village of Northville	0.089 mgd	0.274 mgd
Town of Northampton	0.046 mgd	0.163 mgd
Total:	**3.881 mgd**	**6.757 mgd**

2. Existing municipal water systems in Fulton County use the following sources of water supply:

Municipality	Source of Supply
City of Gloversville	Surface Reservoirs
City of Johnstown	Surface Reservoirs
Village of Broadalbin	Groundwater Wells
Village of Mayfield	Groundwater Wells
Village of Northville	Groundwater Wells
Town of Northampton	Groundwater Wells

3. Based upon the New York State Department of Health and Department of Environmental Conservation's requirements and the Ten State Standards methodologies for determining the capacity of a municipal water supplies, in 2012, there was approximately 3.71 mgd of excess capacity available in the following four (4) municipal water systems that had excess capacity:

Municipality	Excess Water Capacity
City of Gloversville	3.12 mgd
City of Johnstown	0.00 mgd
Village of Broadalbin	0.24 mgd
Village of Mayfield	0.00 mgd
Village of Northville	0.23 mgd
Town of Northampton	0.12 mgd
Total:	**3.71 mgd**

It is important to note that the excess water system capacity, or lack thereof, is based on a discrete sampling of data points representing historical water usage. Based on our understanding of the historical water usage for each municipality, EDP believes

that the water system capacities reported herein are generally representative of each system.

4. There are several locations around the Cities and Villages where municipal services have been extended outside the corporate limits of the Cities and Villages as shown in Figure 1. However, for the most part, services were extended to serve only very specific locations resulting in a number of undesirable dead end water mains.

5. No comprehensive plan exists to extend municipal water services to areas of Fulton County that desire or need this service. The lack of a comprehensive plan could result in the installation of water system infrastructure that is not sized or located appropriately for future growth.

6. The Cities of Gloversville and Johnstown's water distribution systems are physically connected in two (2) locations. From 1980-1985, the City of Gloversville supplied approximately 500,000 gallons per day to the City of Johnstown to help address a water shortage the City of Johnstown was experiencing at that time.

7. The cost of water supplied by Fulton County Water District is very expensive due to:
   a. The District paying twice the in-City retail rate for the water as opposed to a wholesale rate.
   b. The restricted number of users connected into the water line.

B. WASTEWATER TREATMENT

1. In 2012, the average daily wastewater flows into existing municipal wastewater treatment systems were:

Wastewater Treatment Facility	Average Daily Flow
Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF)	5.200 mgd
Village of Broadalbin	0.085 mgd
Village of Mayfield	0.055 mgd
Town of Northampton	0.050 mgd
Total:	**5.390 mgd**

2. In 2012, there was approximately 8.737 mgd of excess flow capacity available in the four (4) municipal wastewater systems:

Wastewater Facility	Excess Flow Capacity	Excess BOD Capacity	Excess SS Capacity	Excess TKN Capacity
GJJWTF	8.600 mgd	22,215 lb/day	9,833 lb/day	7,995 lb/day
Village of Broadalbin	0.060 mgd	--[1]	--[1]	--[1]
Village of Mayfield	0.070 mgd	--[1]	--[1]	--[1]
Town of Northampton	0.007 mgd	--[1]	--[1]	--[1]
Total	**8.737 mgd**	**22,215 lb/day**	**9,833 lb/day**	**7,995 lb/day**

1. Data not available.

3. In 2012, the combined excess wastewater flow capacity (8.737 mgd) exceeded the combined excess water system capacity (3.71 mgd) in the Fulton County municipalities providing these services.

4. No comprehensive plan exists to extend municipal wastewater services to areas of Fulton County that desire or need this service. As shown in Figure 1, some wastewater system infrastructure is located outside the Cities of Gloversville and Johnstown; however, without a comprehensive plan infrastructure may be installed which is inadequately sized and or positioned for future growth.

5. The Cities of Gloversville and Johnstown jointly own and operate a regional wastewater treatment system:
    - Each City owns, operates and maintains the wastewater collection system in their City.
    - The Cities jointly own the GJJWTF.
    - The GJJWTF is operated and managed by the Joint Sewer Board.

6. The GJJWTF is a regional wastewater system.

7. The GJJWTF operates under the terms of a Joint Sewer Contract dated May 1964 that has been amended over a dozen times making the Agreement difficult to read, follow and comprehend.

8. Section 13 of the 1964 Joint Sewer Contract has reportedly been a source of contention between the two (2) Cities. This Section includes a requirement that both Cities must approve the extension of new wastewater lines outside of either system. It is EDP's understanding that there has been discussion about changing this requirement so that the decision whether to extend a wastewater line can be made by the Joint Sewer Board and have it based on capacity at the GJJWTF.

9. FMCC owns and operates a wastewater treatment plant that services FMCC, HFM-BOCES and student housing.

EXISTING REGIONAL WATER AND WASTEWATER SYSTEMS IN NEW YORK STATE

Regional water and wastewater systems are common across New York State. Regional systems provide advantages in terms of the ability to extend water and wastewater services outside existing municipalities and share resources between communities. Some communities now served by a regional system faced similar challenges to those expressed within Fulton County in terms of protecting individual resources and potential loss of local control. These communities were able to overcome their differences and work through the issues to develop water and/or wastewater systems that now benefit the entire region.

EDP investigated a number of existing regional systems in New York State. Based upon this research, EDP determined that:

A. There are numerous regional water and wastewater systems currently operating in New York State.
B. Regional water and wastewater systems were created to:
    1. Promote land development.
    2. Promote SMART Growth.
    3. Address specific water and wastewater issues in a region.
C. There are two (2) administrative structures used in regional water and wastewater systems:
    1. Systems administered by County government.
    2. Systems administered by a County Authority.
D. The administrative structure selected for a particular regional system was determined to be best for that system.
E. Counties that chose the administrative structure using a County Authority were able to successfully create the Authority.
F. There are a variety of operational structures used in regional systems including operating a system through the use of coordinated Inter-municipal Agreements.
G. Regional water systems typically purchase water at wholesale rates from existing water supply sources.
H. Regional water systems often purchase water and wastewater capacities from other municipalities both within and outside their County.
I. Some regional systems provide services throughout a County while others provide services in only a portion of a County.

J. Regardless of the administrative structure used by a regional water and wastewater system, special districts or zones of assessment must be created to define geographic limits of the service provided.
K. The use of groundwater wells as a source of municipal water supply is widespread. Groundwater is used both as a single source of supply and in combination with surface supplies.

Based upon the research conducted, EDP believes a regional water and wastewater system can be successfully implemented by Fulton County. EDP believes a regional system can provide economic benefits for the Region by promoting land development.

RECOMMENDED MODEL FOR A REGIONAL WATER AND WASTEWATER SYSTEM IN FULTON COUNTY

The recommended model for a regional water and wastewater system has two (2) structural components:

A. Administrative Structure:

There are two separate and distinct administrative structures for a regional water and/or wastewater system:

1. Develop a regional system under the existing County government.
2. Develop a regional system by creating a new County Authority.

Other communities across the State have demonstrated that both of these administrative structures provide the ability to successfully deliver water and wastewater services in the regions in which they operate.

For each of these structures, there are options in terms of working with existing municipal water and wastewater systems and the extent to which a new regional system is developed.

EDP recommends the model that Fulton County develop a regional water and wastewater system under the existing structure of the Board of Supervisors. Advancing a regional water and wastewater system under the umbrella of existing County government may increase the size of County government. However, this would be an expected outcome resulting from providing a new municipal service. This structure would afford the County with flexibility in

working with existing municipalities to provide services and maximize administration and operation and maintenance efficiencies.

B. Operational Structure:

The operational structure of a regional system can vary significantly in terms of the extent to which a regional service provider is involved in developing, operating, and maintaining water and wastewater system capacities and distribution / collection system infrastructure. A regional service provider may choose to develop it's own water supply and wastewater treatment capabilities and system infrastructure or rely on cooperation, through inter-municipal agreements, with other municipalities for the provision of these services.

Since it is not know, at present, where water and wastewater capacities will be developed, which existing water and wastewater service providers will participate in a regional system, or where infrastructure will be installed, EDP does not, at this time, offer any specific recommendations on the model's operational structure. As the answers to these unknowns are established, the operational structure will be developed.

POTENTIAL SOURCES OF WATER AND WASTEWATER CAPACITIES FOR A REGIONAL WATER AND WASTEWATER SYSTEM IN FULTON COUNTY

EDP recommends Fulton County's first step in developing a regional water and wastewater system be to obtain water supply and wastewater treatment capacities. Fulton County's options for obtaining these capacities are summarized below. These options are illustrated conceptually in Figures 2 and 3 located at the end of the Executive Summary.

A. Water Supply:

1. Existing Municipal Water Systems within Fulton County
    a. Purchase excess system capacity
    b. Purchase all or a portion of the existing system
    c. Lease all or a portion of the existing system
2. City of Amsterdam
    a. Purchase raw water
    b. Purchase finish water
3. Develop New Groundwater Supplies
    a. Existing Tryon Facility
    b. Explore other locations in Fulton County
4. Develop the Great Sacandaga Lake as a New Surface Water Supply
    a. Construct a new water treatment facility
    b. Utilize the existing City of Gloversville water treatment facility

B. Wastewater Treatment:

1. Existing Municipal Wastewater Systems within Fulton County
    a. Purchase excess system capacity
    b. Purchase all or a portion of an existing system
    c. Lease all or a portion of an existing system
2. Convey wastewater to the City of Amsterdam for treatment
3. New Wastewater Treatment Facilities
4. Fulton Montgomery Community College Wastewater Treatment Plant

Fulton County should fully evaluate all options starting with negotiating with existing municipalities that provide these services within Fulton County. EDP has learned from its research into how other regional systems were developed in New York State that, in order to purchase/lease excess capacities from municipalities, the arrangement must be a “win-win” situation for both the municipality and Fulton County. It must address each party’s needs and financially benefit both the municipality and Fulton County.

As future water supply and wastewater treatment capacities are considered, Fulton County must work to secure wholesale supply and treatment rates. Wholesale supply and treatment rates are common among municipalities participating in a regional system. EDP’s research determined that charging wholesale rates to a regional system is feasible as the supplier of excess capacity typically experiences minimal additional cost with increased production, does not assume additional distribution system infrastructure operation and maintenance cost and does not assume additional administrative costs associated with new users.

EDP believes opportunities exist for existing municipal systems in Fulton County to financially benefit by selling, at wholesale rates, water and wastewater services to a regional water and wastewater system. The revenues to be generated will be a "win" for local municipalities.

EDP identified the following wholesale rates among the regional systems it researched for this Report:

Regional System and Wholesale Source	Cost per 1000 gal	Percentage of Wholesale Supply	Weighted Average
Genesee County Regional Water System			
City of Batavia	$2.10	58%	$2.47
Monroe County Water Authority	$2.12	23%	
Erie County Water Authority	$4.00	19%	
Wilton Water & Sewer Authority			$2.10
Saratoga County Water Authority	$2.10	100%	
Wayne County Water & Sewer Authority			
Monroe County Water Authority	$1.92	37%	$2.05
Village of Newark	$1.69	14%	
Other Sources	$2.25	49%	
Renselaer County Water & Sewer Authority			$1.86
City of Troy	$1.86	100%	
Fulton County Water District #1			**$6.76**
City of Johnstown	$6.76	100%	

Fulton County has an Agreement in place to purchase water from the City of Johnstown for Fulton County Water District #1. The City of Johnstown sells water to the County at 2 times its retail rate which totals $6.76 per 1000 gallons. As shown in the preceding table, this rate is nearly three times higher than typical wholesale rates found in regional water systems researched for this Report. As a result of selling water at 2 times its retail rate compared to a wholesale rate, the cost to purchase water in Fulton County Water District #1 is very high. EDP found that the rate charged to customers in Fulton County Water District #1 to be one of, if not, the highest rates found during research for this Report. This high retail rate precludes the practical extension of water service to additional users because of the expensive cost of water.

Regardless of where Fulton County ultimately secures water supply and/or wastewater treatment, prior to the installation of any infrastructure there are a series, of administrative, legal, and engineering tasks that must first be completed. EDP believes that, developing a regional system using the recommended administrative structure, Fulton County could initiate this work (i.e., negotiations with existing municipalities, initial administrative, legal, and engineering tasks) without going through the potentially long, costly, and uncertain, in terms of approval, process of forming a new County Authority.

One of the most important factors in successfully developing a regional system will be the ability to identify the needs of individual communities and establish a structure and system that benefits the communities involved. Each alternative offers significant flexibility in terms of working with existing communities; the success of a regional system will depend less on the

structure chosen and more on the ability to work within the structure to satisfy the needs of the community or communities.

EDP RECOMMENDATIONS

Based upon its assessment of the existing water and wastewater delivery system in Fulton County, its investigation and research of existing regional water and wastewater systems in New York State and the need for economic growth in Fulton County, EDP recommends the following. See Section 6 of this Report for a detailed narrative of the recommendations.

A. General Recommendations for a Regional Model:

1. Fulton County should pursue the model of developing a regional water and wastewater system using the existing Board of Supervisors' structure for administering and managing the system.
2. Fulton County should utilize County Special Districts to identify areas receiving water and wastewater services from the Regional System.
3. Fulton County should engage an engineering firm to prepare a SMART Infrastructure Growth Plan that identifies where future water and wastewater services should be provided in Fulton County and establishes basic infrastructure needs.
4. Fulton County should recognize that it does not appear to be economically feasible to extend water and wastewater infrastructure throughout Fulton County.
5. Fulton County should establish infrastructure funding mechanisms and establish County policies related to infrastructure improvements.
6. Fulton County should establish policies and standards for future water and wastewater infrastructure development.
7. Fulton County should apply for State and federal funding to implement water and wastewater infrastructure projects for regional systems.

B. Specific Regional Water System Recommendations:

1. Fulton County should commence immediate discussions with existing municipalities regarding:
   a. Their willingness to provide water capacities to a regional water system.
   b. Their concerns and needs regarding their municipal water system.
   c. Establishing wholesale rates for water capacities provided to a regional system.
2. Fulton County should develop multiple sources of water supply to promote and service future land development. Potential sources include:
   a. Excess capacities from existing municipal water supply systems within Fulton County.
   b. New groundwater sources.

c. Excess water capacity from the City of Amsterdam.
d. Developing the Great Sacandaga Lake as a new surface supply.

3. Fulton County should engage an engineering firm to:
   a. Evaluate the potential for developing groundwater wells at Tryon.
   b. Evaluate the potential for developing groundwater wells outside the Tryon Facility in southeastern Fulton County.
   c. Evaluate the feasibility and cost of developing the Great Sacandaga Lake as a new surface supply for a regional water system.
4. Fulton County should encourage and assist the City of Johnstown in securing additional water capacity by either:
   a. Acquiring capacity from the City of Gloversville.
   b. Securing additional surface reservoir capacity.
   c. Developing new groundwater sources.
5. Fulton County should approach the City of Johnstown to discuss modifying the existing water supply agreement to reduce the rate at which water is purchased for Fulton County Water District No. 1.

C. <u>Specific Regional Wastewater System Recommendations:</u>

1. Fulton County should commence immediate discussions with the Cities of Gloversville and Johnstown and the Joint Sewer Board regarding:
   a. The Cities and Joint Sewer Board's willingness to provide wastewater capacity at the Gloversville Johnstown Joint Wastewater Treatment Facility to a regional wastewater system.
   b. Their concerns and needs regarding their wastewater collection and treatment systems.
2. Fulton County should commence immediate discussions with the Village of Broadalbin, Village of Mayfield and Town of Northampton regarding:
   a. Their willingness to provide wastewater capacity to a regional wastewater system.
   b. Their concerns and needs regarding their wastewater systems.
   c. Their willingness for Fulton County to conduct an engineering evaluation of their wastewater treatment facilities to determine the feasibility for expanding existing facilities.
3. Fulton County should develop multiple sources of wastewater treatment capacity to promote future land development including:
   a. Acquiring excess treatment capacity from the Gloversville Johnstown Joint Wastewater Treatment Facility.
   b. Acquiring excess treatment capacities from the Village of Broadalbin, Village of Mayfield and Town of Northampton.
   c. Acquiring excess treatment capacity from the City of Amsterdam.
   d. Developing packaged wastewater treatment plants at strategic locations.

e. Developing a full wastewater treatment plant at a strategic location.

4. Fulton County should engage an engineering firm to:
   a. Evaluate the feasibility of expanding existing wastewater treatment plants in the Villages of Broadalbin and Mayfield and Town of Northampton.
   b. Evaluate the feasibility of developing a wastewater collection system along the NYS Route 30 corridor from the Fulton / Montgomery County line north to Vails Mills.
   c. Evaluate the feasibility of developing new full or packaged wastewater treatment facilities at strategic locations for service to a regional wastewater system.

IMPLEMENTATION STRATEGY

The implementation of a regional water and wastewater system will involve a number of steps and decision points. The following procedural steps and recommendations are necessary for Fulton County to initiate the process of creating a regional system:

1. Board of Supervisors endorses EDP's Findings Report.
2. Board of Supervisors endorses the development of a regional water and wastewater system under the administrative structure of the existing Board of Supervisors.
3. Board of Supervisors begins the process of obtaining water and wastewater capacities by:
   a. Meeting with Cities of Gloversville and Johnstown to determine their willingness to provide excess water capacities to the County's regional water system and charge wholesale rates.
   b. Meeting with Cities of Gloversville and Johnstown and Joint Sewer Board to determine their willingness to provide excess wastewater capacity at the Gloversville-Johnstown Joint Wastewater Treatment Plant and charge wholesale rates.
   c. Meet with other municipalities in Fulton County that own and operate water and wastewater systems to determine their willingness to provide water and wastewater capacities to the County's regional water and wastewater system and charge wholesale rates.
   d. Meet with City of Amsterdam to discuss obtaining water and wastewater capacities for the County's regional water and wastewater system.
   e. Engage an engineering firm to:
      - Evaluate the potential for developing a groundwater supply at Tryon Technology Park and Incubator Center.
      - Evaluate areas in Fulton County that could produce high yield groundwater supplies for the County's regional water system.
   f. Engage an engineering firm to prepare the engineering report needed for Fulton County to pursue the acquisition of water capacity from the Great Sacandaga Lake.
4. Prepare a SMART Growth Infrastructure Plan:
   a. Identify areas of Fulton County to be serviced by water and wastewater service based upon sources of water and wastewater capacities.

b. Estimate cost of providing services to these areas.
c. Prepare SMART Growth Plan.

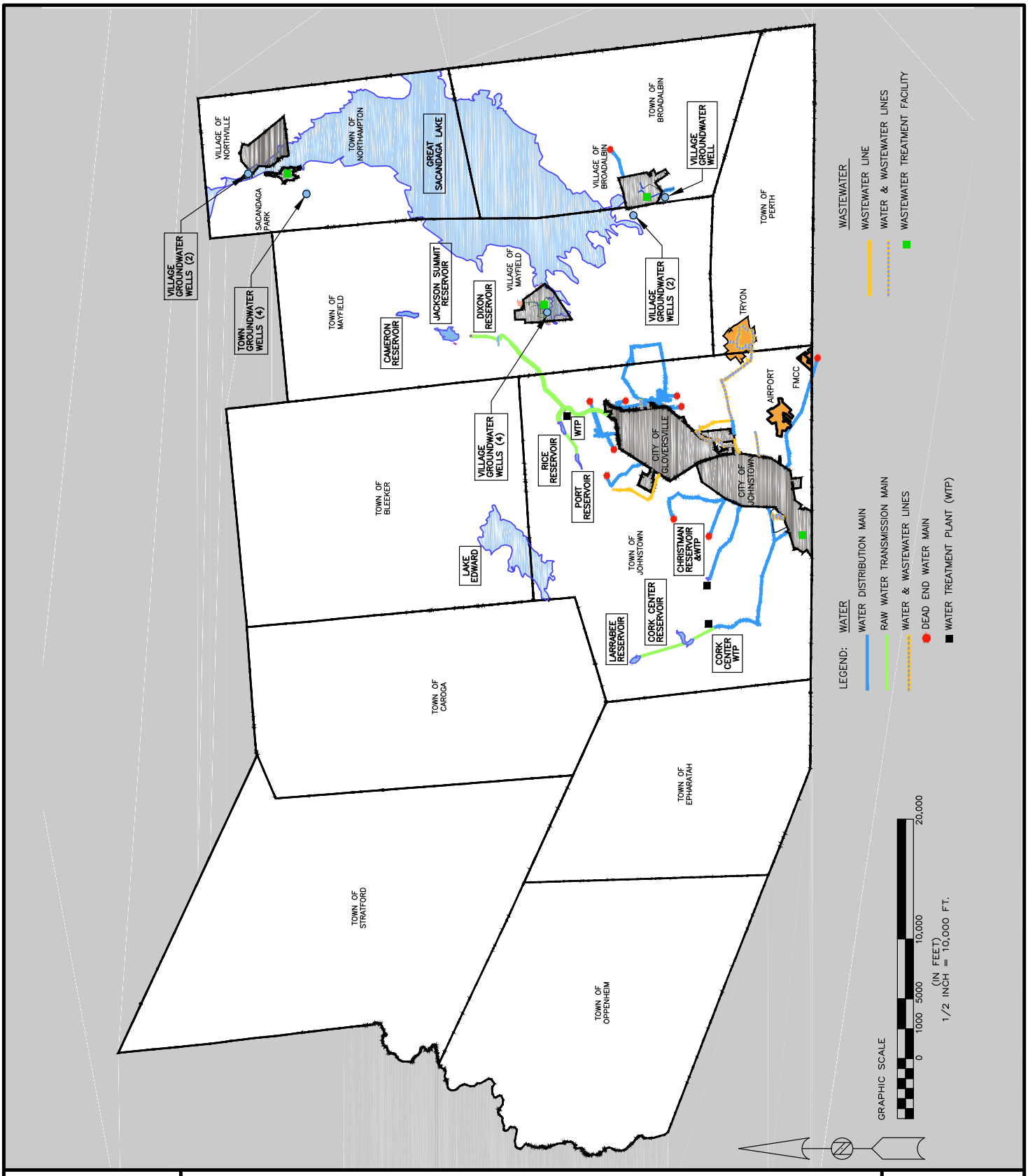
In conclusion, EDP believes it is feasible for Fulton County to establish a regional water and wastewater system. The feasibility of establishing and developing a regional water and wastewater system depends on three factors:

1. Commitment
2. Engineering
3. Financing

The Fulton County Board of Supervisors needs to make a long-term commitment to develop and implement a regional system. Other Counties across the state have demonstrated that, with a long-term commitment, obstacles can be overcome and a "win-win" situation for communities can be achieved.

In terms of engineering, Fulton County is fortunate to have several viable options available for securing existing water and wastewater capacities and/or establishing new sources of supply or treatment. As negotiations with existing municipal suppliers progress and the available options become clear a SMART Growth Infrastructure plan will be established.

In terms of financing, Fulton County Board of Supervisors should understand that it will not be feasible to extend water and wastewater infrastructure throughout the County. The areas in Fulton County that water and wastewater infrastructure can feasibly and cost effectively be provided to will be identified once sources of water and wastewater capacities have been identified and a Smart Growth Infrastructure Plan is developed. However, as demonstrated in other communities, when water and wastewater services are made available to vacant land, the opportunity for land development is enhanced. The timing and extent to which a regional system is developed will depend upon a number of factors including the availability of water supply and wastewater treatment, available financing and the progression of land development.



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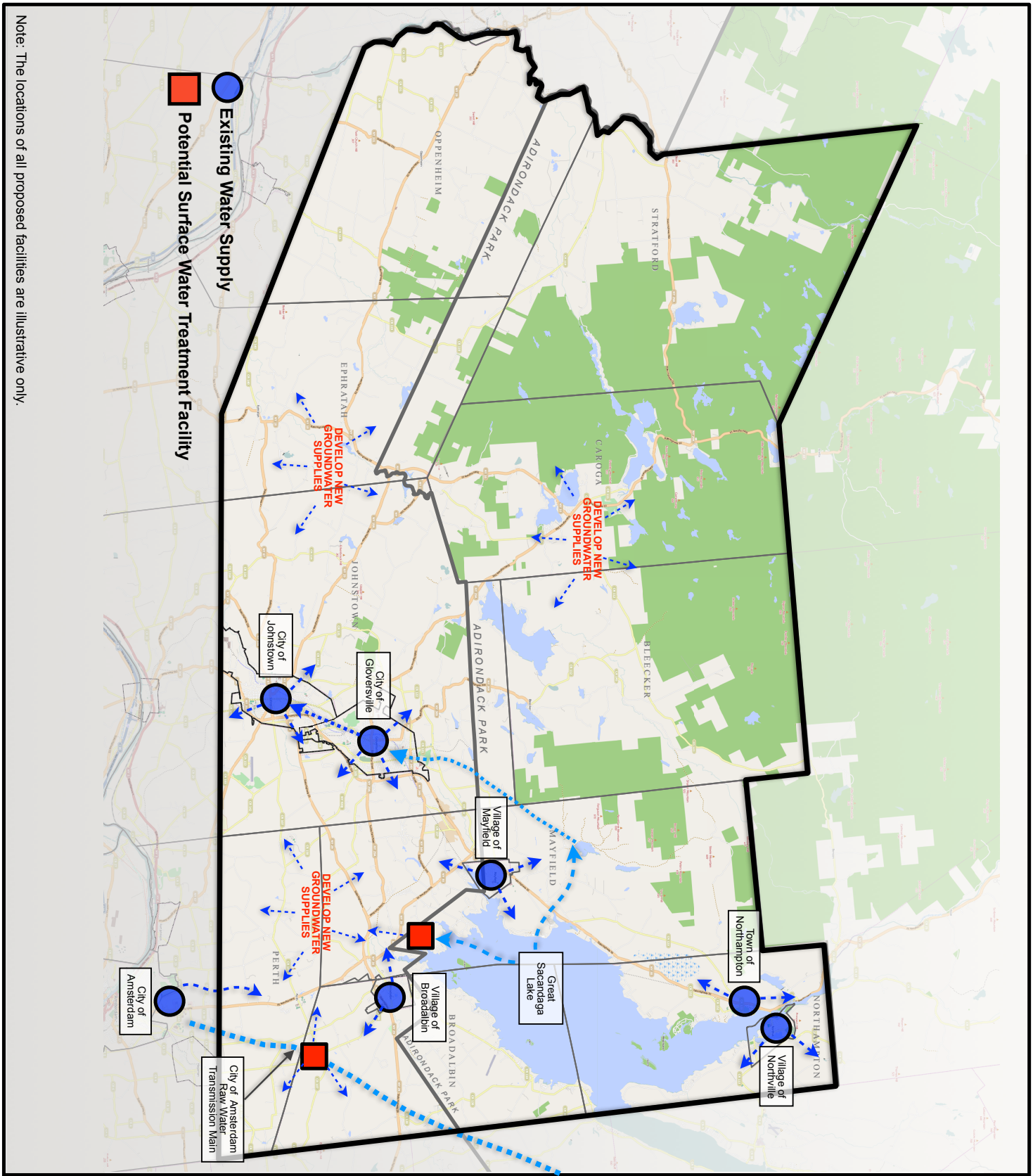
EXISTING WATER & WASTEWATER INFRASTRUCTURE OF FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

FIGURE: 1



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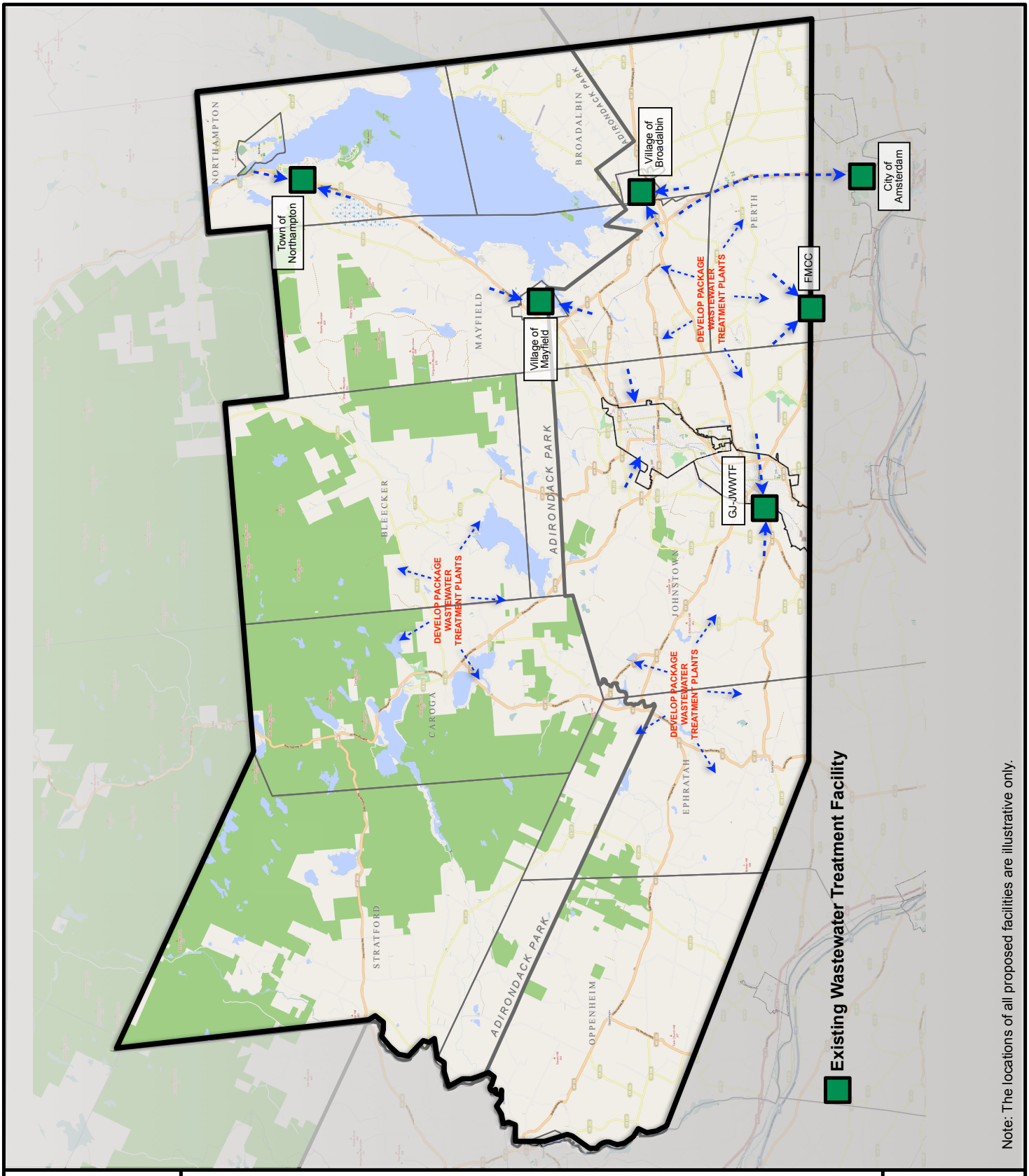
POTENTIAL WATER SUPPLY OPTIONS FOR FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

FIGURE: 2



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POTENTIAL WASTEWATER TREATMENT OPTIONS FOR FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

FIGURE: 3